

CLAIMS

What is claimed is:

1. A self-adhering bale strapping band comprising:
 - a plurality of aligned paper strips, at least one of said paper strips being folded longitudinally to define at least two plies, said paper strips being internally adhesively bonded together;
 - a first external surface and a second external surface;
 - at least one internal ply disposed between said first external surface and said second external surface;
 - an external adhesive applied to said first and second external surfaces, said external adhesive adapted to be reactivated such that said first external surface bonds to said second external surface.
2. The bale strapping band of claim 1, wherein said at least one internal ply comprises multiple plies and wherein all said multiple plies and said first external surface and said second external surface are internally adhesively bonded.
3. The bale strapping band of claim 1, wherein said external adhesive comprises a water-soluble adhesive.
4. The bale strapping band of claim 1, wherein said external adhesive comprises a heat-activated adhesive.
5. The bale strapping band of claim 1, wherein said one or more paper strips comprise repulpable material.

- 5 6. The bale strapping band of claim 1, wherein said paper strips comprise a pair of paper
strips each longitudinally folded into two plies such that said bale strapping band is a four-
ply composite.
- 10 7. The bale strapping band of claim 1, wherein said paper strips comprise a pair of paper
strips each longitudinally folded into three-ply strips such that said bale strapping band is a
six-ply composite.
- 15 8. The bale strapping band of claim 1, wherein said paper strips comprise a single paper
strip folded around a non-folded internal support strip such that said bale strapping band is a
three-ply composite.
- 20 9. The bale strapping band of claim 8, wherein said internal support strip comprises a
corrugated paper strip.
- 25 10. The bale strapping band of claim 1, wherein said paper strips comprise a single S-
folded, corrugated paper strip such that said bale strapping band is a three-ply composite.
- 20 11. The bale strapping band of claim 3, wherein said water-soluble external adhesive is
absorbed into said first and second external surfaces.
- 25 12. A bale strapping band for banding bales of wood pulp comprising:
 one or more mutually aligned and bonded paper strips having multiple longitudinal
 plies including a first external ply, an opposing second external ply, and at least one internal
 ply disposed between the first and second external plies; and

5 an external adhesive layer disposed on the outer surface of at least one of said external plies such that said bale strapping band may be fixedly adhered to itself by reactivating said external adhesive layer.

10 13. The bale strapping band of claim 12, further comprising one or more internal adhesive layers that adheredly bind the at least one internal ply with the first and second external plies.

14. The bale strapping band of claim 12, wherein said external adhesive layer comprises a water-soluble adhesive material.

15 15. The bale strapping band of claim 12, wherein said external adhesive layer comprises a heat-activated adhesive material.

16. The bale strapping band of claim 12, wherein said one or more paper strips comprise repulpable material.

17. The bale strapping band of claim 12, wherein said one or more paper strips comprises a pair of paper strips each longitudinally folded into two plies such that said bale strapping band is a four-ply composite.

18. The bale strapping band of claim 12, wherein said one or more paper strips comprises a pair of paper strips each longitudinally folded into three-ply strips such that said bale strapping band is a six-ply composite.

5 19. The bale strapping band of claim 12, wherein said one or more paper strips comprises a single paper strip folded around a non-folded internal support strip such that said bale strapping band is a three-ply composite.

20. The bale strapping band of claim 19, wherein said internal support strip comprises a corrugated paper strip.

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21. The bale strapping band of claim 12, wherein said one or more paper strips comprises a single S-folded, corrugated paper strip such that said bale strapping band is a three-ply composite.

15 22. The bale strapping band of claim 14, wherein said water-soluble external adhesive material is absorbed into said outer surface.

23. A bale strapping band produced by the steps of:

providing a plurality of paper strips;

20 folding at least one of said paper strips longitudinally to define at least two plies;

aligning and adhesively bonding said paper strips together to form a paper band having a first external surface, a second external surface and at least one internal ply;

25 applying a water-soluble adhesive to said first and second external surfaces, said water-soluble adhesive possessing the capacity to be absorbed by said first and second external surfaces and to be reactivated after it has cured in order to subsequently bond said first and second external surfaces together;

allowing said water-soluble adhesive to cure.

- 5 24. The bale strapping band of claim 23, further comprising the steps of:
encircling said band around a bale;
reactivating a short section of said water-soluble adhesive on said first external
surface and said second external surface
pressing said first and second external surfaces together at said short section of said
10 reactivated water-soluble adhesive;
allowing said reactivated water-soluble adhesive to cure, such that said band encircles
said bale.
25. The bale strapping band of claim 24, wherein said step of folding at least one of said
15 paper strips longitudinally to define at least two plies comprises:
folding each of two paper strips longitudinally into two plies such that said bale
strapping band consists of two internal plies, a first external surface and a second external
surface.
- 20 26. The bale strapping band of claim 24, wherein said step of folding at least one of said
paper strips longitudinally to define at least two plies comprises:
folding each of two paper strips longitudinally into three plies such that said bale
strapping band consists of four internal plies, a first external surface and a second external
surface.
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27. A method of strapping a paper bale comprising the steps of:
providing a paper bale;
providing a bale strapping band comprising a plurality of aligned paper strips, at least
one of said paper strips being folded longitudinally to define at least two plies, said paper
30 strips being internally adhesively bonded together; a first external surface and a second

5 external surface, at least one internal ply disposed between said first external surface and said second external surface, and a water-soluble external adhesive applied to said first and second external surfaces, said external adhesive being absorbed by said first and second external surfaces and adapted to be reactivated such that said first external surface bonds to said second external surface;

10 encircling said bale with said bale strapping band;

reactivating a short section of said water-soluble external adhesive on said first external surface and said second external surface;

pressing said first and second external surfaces together at said short section of said reactivated water-soluble external adhesive;

15 allowing said reactivated water-soluble external adhesive to cure.

28. The method of claim 27, wherein said step of reactivating said water-soluble adhesive comprises applying water.

20 29. The method of claim 27, wherein said step of reactivating said water-soluble adhesive comprises applying heat.